

CLAIMS

1. A submount for a light emitting/receiving device, comprising:

5 a mounting surface (4) on which a light emitting/receiving device (11) is mounted;

a device-side opening (31) which is provided in the mounting surface (4) and through which light inputted to or outputted from the light emitting/receiving device (11) passes;

10 an outer opening (32) provided in a face facing the mounting surface (4);

a reflecting surface which adjoins the device-side opening (31) and the outer opening (32) and which is formed parallel with a specified crystal orientation face so as to reflect the light between one side on which the light emitting/receiving device (11) is provided and another side on which the outer opening (32) is opened.

2. The submount for the light emitting/receiving device as claimed in Claim 1, wherein

20 the submount is formed of single crystal silicon;

the mounting surface (4) is parallel with a (100)-oriented surface of the single crystal silicon, and

the reflecting surface is parallel with a (111)-oriented surface of the single crystal silicon.

25 3. The submount for the light emitting/receiving device

as claimed in Claim 1, further comprising:

a through hole (3) for connecting the device-side opening (31) and the outer opening (32) to each other;

5 a first metal film (6) formed on an inner side face of the through hole (3); and

a second metal film (5) formed on a surface of the first metal film (6), wherein

a surface of the second metal film (5) serves as the reflecting surface.

10 4. The submount for the light emitting/receiving device as claimed in Claim 1, further comprising:

a through hole (3) for connecting the device-side opening (31) and the outer opening (32) to each other;

15 a dielectric film (7) formed on an inner side face of the through hole (3); and

a metal film (5) formed on a surface of the dielectric film (7), wherein

a surface of the metal film (5) serves as the reflecting surface.

20 5. The submount for the light emitting/receiving device as claimed in Claim 1, further comprising:

a through hole (3) for connecting the device-side opening (31) and the outer opening (32) to each other;

25 a first metal film formed on an inner side face of the through hole (3);

a dielectric film formed on a surface of the first metal film; and

a second metal film formed on a surface of the dielectric film, wherein

5 a surface of the second metal film serves as the reflecting surface.

6. The submount for the light emitting/receiving device as claimed in Claim 1, further comprising

10 a dielectric film (8b) which surrounds the device-side opening (31).

7. The submount for the light emitting/receiving device as claimed in Claim 1, wherein

the device-side opening (31) is rectangular-shaped.

8. A method for manufacturing a submount for a light emitting/receiving device, comprising the steps of:

15 performing etching from a face of a substrate opposite to a mounting surface (4) on which a light emitting/receiving device (11) is mounted to form an outer opening (32) and a through hole (3) adjoining the outer opening; and

20 removing a portion of the substrate corresponding to the mounting surface (4) to form a device-side opening (31) adjoining the through hole (3) and having a specified size.

9. The method for manufacturing a submount for a light emitting/receiving device as claimed in Claim 8, wherein

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the portion of the substrate corresponding to the mounting surface (4) is removed by polishing.